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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/918,746	07/31/2001	Clinton Gene Laschkewitsch	ROC920010041US1	2727

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EXAMINER

CHEA, PHILIP J

ART UNIT	PAPER NUMBER
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2153

DATE MAILED: 11/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/918,746	LASCHKEWITSCH ET AL.	
	Examiner	Art Unit	
	Philip J Chea	2153	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☒ Claim(s) 1 and 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-23 have been examined.

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 7/31/01 was filed after the mailing date on 7/31/01. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Objections

2. Claim 4 is objected to because of the following informalities:

- Note line 4 "remove the a member" is apparently "remove a member".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Regarding claim 1, line 7, the phrase "is indicated its respective copy" renders the claim indefinite because it is unclear what the intended scope of the claim is. Examiner interprets the phrase as reading "is indicated in its respective copy".
- Claims 2-7 are rejected by virtue of being dependent on a rejected claim.
- Claim 8 is rejected because the specification does not disclose what a "job" is. Examiner interprets a job to be a process running on a processor. Claim 8 is also rejected because it is unclear the number of lists that are claimed. See line 4, where a single list is

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mentioned, and line 7, where multiple lists are mentioned. Examiner interprets multiple lists, one for each job.

- Claims 9-10 are rejected by virtue of being dependent on a rejected claim.
- Claim 11 recites the limitation "new node" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

5. Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Badovinatz et al. (US 6,026,426), and further in view of Moiin et al. (US 5,999,712).

As per claim 1, Badovinatz et al. disclose a system for managing membership of members in a cluster, as claimed, comprising:

- providing a domain for each member of a group, wherein the domain indicates all members of the cluster with a membership to the group (see column 6, lines 1-10); and

Although the system disclosed by Badovinatz et al. shows substantial features of the claimed invention (discussed above), it fails to disclose: each group member accessing its respective copy of the domain to determine whether the requestor is indicated in its respective copy.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Badovinatz et al., as evidenced by Moiin et al.

In an analogous art, Moiin et al. disclose a distributed computer system with a system for managing membership of members in a cluster, as claimed, comprising each member of the group accessing its respective copy of the membership list to determine whether the requestor is indicated in its copy of the list (see columns 11 and 12, lines 59-67 and 48-66, where copy of list = own *M_{prop}*).

Given the teaching of Moiin et al., a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Badovinatz et al. by requiring each member to look in their respective list to add a member, such as disclosed by Moiin et al., in order to optimize the cluster which reflects the changes created by the added process (see Moiin et al., column 4, lines 23-39).

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As per claim 8, Badovinat et al. disclose a system of managing membership of jobs in a cluster, as claimed, comprising:

- receiving a request to create a group comprising at least two jobs: creating, on a respective node on which each of the at least two jobs is running, a list indicating each of the at least two jobs (see column 7, lines 2-16, where two jobs = joining processor [requestor] and group leader).

Although the system disclosed by Badovinat et al. shows substantial features of the claimed invention (discussed above), it fails to disclose: accessing each list of each job of the group to determine whether the requesting member job is included in each list.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Badovinat et al., as evidenced by Moiin et al.

In an analogous art, Moiin et al. disclose a distributed computer system with a system for managing membership of members in a cluster, as claimed, comprising each member of the group accessing its respective copy of the membership list to determine whether the requestor is indicated in its copy of the list (see columns 11 and 12, lines 59-67 and 48-66, where copy of list = own *M_{prop}*).

Given the teaching of Moiin, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Badovinat et al. by requiring each member to look in their respective list to add a member, such as disclosed by Moiin, in order to optimize the cluster which reflects the changes created by the added process (see Moiin, column 4, lines 23-39).

As per claim 2, Badovinat et al. in view of Moiin et al. further disclose the requestor requesting to join the group (see Badovinat column 7, lines 2-16, requestor = joining processor).

As per claims 3 and 9, although the system disclosed by Badovinat et al. shows substantial features of the claimed invention (discussed above), it fails to disclose a join request causing an active member currently in the group to access its list to determine whether the inactive member is included.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Badovinat et al., as evidenced by Moiin et al.

Moiin et al. further disclose a distributed computer system with a system for managing membership of members in a cluster, as claimed, comprising each member of the group accessing its respective copy of the membership list to determine whether the inactive member is included in its copy of the list (see columns 11 and 12, lines 59-67 and 48-66, where copy of list = own M_{prop}).

Given the teaching of Moiin, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Badovinat et al. by requiring each member to look in their respective copy to add a member, such as disclosed by Moiin, in order to optimize the cluster which reflects the changes created by the added process (see Moiin, column 4, lines 23-39).

As per claim 4, Badovinat et al. in view of Moiin et al. further disclose providing a first interface invoked by a request to add a potential member to the group (see Badovinat Fig. 12, [1204], where *yes* branch indicates first request of new member), a second interface invoked by a request to join an inactive member (see Badovinat Fig. 12, where *no* branch indicates a returning member), and a third interface invoked by a request to remove a member from the group (see Badovinat Fig. 13, [1300],[1306]).

As per claim 5, Badovinat et al. in view of Moiin et al. further disclose the domain being a unique persistent object in the cluster (see Badovinat column 6, lines 1-3, where memory is considered persistent storage).

As per claim 6, Badovinat et al. in view of Moiin et al. further disclose the members being jobs on nodes of the cluster (see Badovinat Fig. 4, jobs = processes).

As per claim 7, Badovinat et al. in view of Moiin further disclose members being differentiated by unique names (see Badovinat Fig. 4, where processes are uniquely identified as process x and process y).

As per claim 10, Badovinat et al. in view of Moiin et al. further disclose upon receiving a request to leave a group from a requesting member job having membership to the group: updating each list of each job of the group to remove the requesting member job from the list (see Badovinat column 7, lines 36-49).

As per claim 11, Badovinat et al. in view of Moiin et al. further disclose upon receiving a request to add a new job to the group: for each current member of the group, updating a respective list to include

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the new job (see Badovinatze column 7, lines 17-35, where the group leader adds the new job to the list); and

replicating the list to the new job (see Badovinatze column 6, lines 1-10, where a copy of the membership list is given to the new processor [job]).

6. As per claims 12 and 19, Badovinatze et al disclose a computer system, comprising a first plurality of nodes, each node comprising:

- a processor configured to execute at least one job (see Fig. 4, processing nodes 1-3, each having at least one process); and
- a memory device containing a copy of a first list (see Badovinatze column 6, lines 1-3); wherein each copy of the first list indicates jobs with a membership to a first group (see column Badovinatze 6, lines 1-10, where processor = job).

Although the system disclosed by Badovinatze et al. shows substantial features of the claimed invention (discussed above), it fails to disclose each job configured to access its respective copy of the first list to determine whether a requesting job of another node may be joined to the first group.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Badovinatze et al., as evidenced by Moiin et al.

Moiin et al. further disclose a distributed computer system with a system for managing membership of members in a cluster, as claimed, comprising each member of the group accessing its respective copy of the membership list to determine whether the requestor is indicated in its copy of the list (see columns 11 and 12, lines 59-67 and 48-66, where copy of list = own *M_{prop}*).

Given the teaching of Moiin, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Badovinatze et al. by requiring each member to look in their respective list to add a member, such as disclosed by Moiin, in order to optimize the cluster which reflects the changes created by the added process (see Moiin, column 4, lines 23-39).

As per claims 13 and 23, Badovinatze et al. in view of Moiin et al. further disclose a plurality of interfaces configured for adding jobs to the first group (see Badovinatze Fig. 12, [1204], where yes branch

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indicates first request of new member), removing jobs from the first group (see Badovinatze Fig. 13, [1300], [1306]), and joining returning member jobs to the first group (see Badovinatze Fig. 12, where *no* branch indicates a returning member).

As per claims 14 and 20, Badovinatze et al. in view of Moiin et al. further disclose each job configured to update its respective copy of the first list to include added members (see Badovinatze column 13, lines 47-53).

As per claims 15 and 21, Badovinatze et al. in view of Moiin et al. further disclose each job configure to update its respective copy of the first list to remove dropped members (see Badovinatze column 14, lines 16-20).

As per claim 16, although the system disclosed by Badovinatze et al. shows substantial features of the claimed invention (discussed above), it fails to disclose the first list containing a reference to a node on which the requesting job is running.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Badovinatze et al., as evidenced by Moiin et al.

Moiin et al. further disclose a distributed computer system with a system for managing membership of members in a cluster, as claimed, comprising each member of the group accessing its respective copy of the membership list to determine whether the requestor is indicated in its copy of the list to add into the cluster (see columns 11 and 12, lines 59-67 and 48-66, where copy of list = own *M_{prop}*).

Given the teaching of Moiin, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Badovinatze et al. by requiring each member to look in their respective list to add a member, such as disclosed by Moiin, in order to optimize the cluster which reflects the changes created by the added process (see Moiin, column 4, lines 23-39).

As per claim 17, Badovinatze et al. in view of Moiin et al. further disclose:

- a second plurality of nodes (see Badovinatze Fig. 1, where there are a plurality of nodes containing processors running jobs); and

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- a copy of a second list stored on each of the second plurality of nodes and associated with a job executing on the each of the second plurality of nodes; wherein each copy of the second list indicates a membership to a second group (see rejection to claim 12, using a different set of nodes chosen from Fig. 1).

As per claims 18 and 22, Badovinatx et al. in view of Moiin et al. further disclose copies of the first list and the second list are each unique on the system (see Badovinatx column 4, lines 50-65, where it is implied a group can have different members, hence different lists).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Modiri, Ramin et al.	US 6192401
Park, Jung Soo et al.	US 6529882
Schiffleger, Alan J.	US 5434970
Shirriff, Kenneth W.	US 20030023680
Slaughter, Gregory L. et al.	US 6014669
Sreenivasan, Padmanabhan et al.	US 20020049845

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip J Chea whose telephone number is 703-605-1202. The examiner can normally be reached on M-F 7:45-4:15.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Burgess can be reached on 703-305-4792. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Philip J Chea
Examiner
Art Unit 2153

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